

SECTION 9

POLLUTION PREVENTION AND WASTE MINIMIZATION PLAN

I. INTRODUCTION

- A. The United States Department of Agriculture, Agricultural Research Service, and the Stuttgart/Pine Bluff Location (**SPBL**), which consists of the Aquaculture Systems Research Unit (ASRU, 1500 Oliver Road, Pine Bluff, AR 71601), the Dale Bumpers National Rice Research Center (DB NRRC, P.O. Box 1090, Stuttgart, AR 72160) and the Harry K. Dupree Stuttgart National Aquaculture Research Center (HKD SNARC, P.O. Box 1050, Stuttgart, AR 72160) are committed to the ideals of pollution prevention and waste minimization.
- B. The general intent of this plan is to comply with the various regulations and Executive Orders governing pollution prevention and waste reduction. Chief among these Executive Orders is E. O. 12856, signed in August 1993, which, among other things, requires Federal agencies to develop voluntary goals to (1) reduce releases and off-site transfers of toxic chemicals and pollutants by 50% and (2) establish plans for reducing acquisition of substances containing extremely hazardous substances or toxic chemicals.
- C. Our efforts are directed in three main categories:
 - 1. Using materials, processes, or practices that reduce the quantity and toxicity of chemicals used at **SPBL**.
 - 2. Implementing programs, including recycling, that eliminate or reduce the discharge of hazardous or toxic chemicals to the environment
 - 3. Protecting natural resources through conservation and improved efficiency.
- D. Implementation of this plan will help attain the following location goals:
 - 1. Using 1994 as the baseline year, achieving a chemical waste reduction of 50% by 1999, aiding the Agency's goal of 50% by 1999.
 - 2. Using 1994 as the baseline year, achieving a nonhazardous solid waste reduction of 20% by 1999.
 - 3. Using 1985 as the baseline year, achieving an energy use reduction of % by 2005, helping to attain compliance with overall energy use reduction of 30% by 2005 in all Federal buildings.

II. REFERENCES

- A. Executive Order 12856, Federal Compliance with Right-to Know Laws and Pollution Prevention Requirements (August 3, 1993)

- B. Executive Order 12873, Federal Acquisition, Recycling, and Waste Prevention (October 20, 1993)
- C. Executive Order 12902, Energy Efficiency and Water Conservation (March 8, 1994)
- D. Executive Order 12843, Procurement Requirements and Policies for Federal Agencies for Ozone-Depleting Substances (April 21, 1993)
- E. Executive Order 12844, Federal Use of Alternative Fueled Vehicles (April 21, 1993)
- F. Executive Order 12845, Purchasing Energy Efficient Computer Equipment (April 21, 1993)
- G. Executive Order 12898, Federal Actions to Address Environmental Justice

III. DEFINITIONS - For the purpose of this plan, the following definitions will apply:

- A. Environmental Justice: The management of environmental problems and policies to reduce differences in whom bears environmental risks. Also called “environmental equity”.
- B. Minimized Material: A material whose use or waste has been identified for source reduction, recycling, inventory control, or removal from the waste stream.
- C. Minimized Material List: A list of products that are determined to be Minimized Materials and diverted from the waste stream.
- D. Pollution Prevention: Practices which reduce the amount of hazardous substances, pollutants, or contaminants entering the waste stream or being released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and practices which reduce the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.
- E. Pollution Prevention Action Committee: Team responsible for development and implementation of the Waste Minimization and Pollution Prevention Plan.
- F. Pollution Prevention Opportunity Assessment (PPOA): An assessment that investigates and prioritizes pollution prevention methods for each waste. It also identifies methods to reduce material and power consumption, investigates opportunities to change processes, waste generation patterns, and material or power consumption to reduce associated environmental impacts.
- G. Recycle: To recover and reuse useful material from garbage or waste.
- H. Reuse: To use a material again.

- I. Source Reduction: The design, manufacture, acquisition, and reuse of materials so as to minimize the quantity and/or toxicity of waste produced. Source reduction prevents waste either by redesigning products or by otherwise changing patterns of consumption, use, and waste generation.
- J. Waste Stream: The total flow of solid waste from ARS facilities that must be recycled, burned, or disposed of. Apparent waste of natural resources and energy is included in this definition.

IV. RESPONSIBILITIES

A. The Location Coordinator

Current LC is Don Freeman

- 1. Approves, by signature, this plan.
- 2. Authorizes and supports the implementation of this plan, the annual review of this plan, and amendments or changes to this plan.
- 3. Establishes and supports a Pollution Prevention Action Committee.
- 4. Provides resources for training, equipment, and other support called for in the program.
- 5. Lead scientists and department supervisors are responsible for ensuring employee compliance within their functional area

B. The Safety Committee acts in consultation with Location management and:

- 1. Develops baselines from which chemical use and waste stream reductions are charted
- 2. Assists Research Leaders, and maintenance personnel to develop standard operating procedures for reducing use of each identified minimized material
- 3. Accomplishes record keeping and reporting requirements
- 4. Maintains records of program activities.
- 5. Maintains this plan and records of program activities.
- 6. Conducts or arranges employee education and training
- 7. Performs compliance inspections
- 8. The Pollution Prevention Action Committee
- 9. The committee consists of the following:

- a. Collateral Duty Safety Officer, Chemical Hygiene Officer, and Hazardous Waste Manager
 - b. Representatives from research of the units and administrative support staff
 - c. Oversees the program and meets quarterly
 - d. Establishes minimization goals and target dates
 - e. Reviews waste stream analyses and prioritizes streams to be evaluated
 - f. Reviews, approves, and prioritizes the implementation of Pollution Prevention Opportunity Assessments
 - g. Approves Standard Operating Procedures (SOPs)
 - h. Establishes priority of materials to be minimized
 - i. Develops the Minimized Material List
 - j. Reviews new protocols, use of new materials etc. Reevaluates previous protocols to determine if new, different, or previously untried strategies can be implemented to reduce waste. Adds these changes to the program, as necessary.
 - k. Assists in information sharing
 - l. Reviews this plan annually
 - m. Monitors program effectiveness
 - n. Publicizes the plan
 - o. Creates incentives for employee commitment and compliance
10. Research Leaders and department heads will:
- a. Conduct chemical use/waste stream analysis
 - b. Conduct Pollution Prevention Opportunity Assessments
 - c. Develop pertinent Standard Operating Procedures
 - d. Comply with all provisions of this plan

V. Pollution Prevention and Waste Minimization Plan Execution for Chemicals and Wastes

1. Conduct an annual survey in each management unit to determine chemicals and wastes generated, and the potential environmental effects of each. Particular emphasis should be placed on safety and environmental impacts in environmental justice areas.
2. Survey chemical usage:
3. Look at acquisition records and inventories to identify types and quantities of chemicals used.
4. Identify activity or process in which chemicals are used or generated
5. Determine if inventory exceeds reporting requirements of Emergency Planning and Community Right to Know Act (40 CFR 355, 370, 372). If they do, then participation in Pollution Prevention becomes mandatory.
6. Survey Waste Generation
7. Nonhazardous solid waste generation (waste that would go to the municipal dump).
8. Hazardous waste generation.
9. Evaluate chemical, radiation, and biohazardous waste.
10. Determine amount of material discarded as waste and disposal method.
11. Waste manifests may be used to establish baselines.
12. Review the annual survey to identify achievable goals for reducing chemical use and waste generation.
13. Chemical Use: Using 1994 as the baseline year, the overall agency goal is 50% reduction by 1999. Individual laboratories or management units do not have to have a 50% reduction in chemical use, so long as reasonable efforts are initiated to reduce chemical use.
14. Waste Generation: Using 1994 as the baseline year, the overall agency goal is a nonhazardous solid waste reduction of 50% by 1999.

B. Pollution Prevention Opportunity Assessments will be conducted for each identified stream, in accordance with priorities established by the Safety Committee. The PPOA will be conducted and include as follows:

1. Identify and describe method of minimization
2. Chemical Use Minimization: Methods designed to reduce use and acquisition of material will be given priority.
3. Source reduction
4. Inventory control
5. Substitution of more environmentally friendly substance
6. Elimination
7. Activity/process changes
8. Equipment modifications
9. Waste Minimization NOTE-Multiple PPOA's may be required for each stream analysis.
10. Recycling
11. Housekeeping
12. Waste stream segregation
13. Expected reduction percentage
14. Environmental/safety benefits
15. An economic analysis can be performed to estimate savings or investment recovery time based upon estimated start-up costs, monthly added costs, and monthly avoided costs.

C. Review, approve, and prioritize PPOAs. Implementation will then be prioritized according to the following sequential criteria:

1. Environmental and safety compliance
2. Environmental and safety benefits
3. Mission impact
4. Economic feasibility
5. Ease of implementation
6. Develop Standard Operating Procedures for Minimized Material
7. Once a PPOA has been approved, a standard operating procedure for the material/process will be developed using the PPOA
8. The SOP will then be submitted to the Committee for review
9. After Committee approval, the material will be added to the Minimized Material List
10. SOP's will be appended to the Minimized Material List
11. Establish Minimized Material Listing
12. Once a material has been declared minimized (by approval of PPOA and SOP) it will be placed on the Minimized Material Listing
13. Any material appearing on this list will only be managed according to the standard operating procedure developed for its minimization

D. Pollution Prevention and Waste Minimization Plan Execution for Natural Resources: Reducing natural resource consumption is also a part of pollution prevention. Natural resource conservation is integrated into the pollution prevention program in the same manner as other chemicals:

1. Conduct an annual survey in each management unit to determine natural resources used and the potential environmental effects of each. Particular emphasis should be placed on safety and environmental effects in environmental justice areas.

2. Energy consumption in buildings, equipment, and vehicles. Utility and fuel bills may be used to establish baselines
3. Water consumption
4. Use of ozone depleting substances.
5. At ARS, the natural resource conservation program is managed across functional lines. For example, at the Area Office the Engineering Section is responsible for ensuring appropriate insulation is installed in new buildings, and the Property Section is responsible for buying energy efficient vehicles whose air conditioners do not contain ozone damaging substances.
6. Review the annual survey to identify achievable goals for reducing use of natural resources. Using 1985 as the baseline year, achieving an energy use reduction of 30% by 2005, helping to attain compliance with overall energy use reduction of 30% by 2005 in all Federal buildings.
7. Pollution Prevention Opportunity Assessments will be conducted for each identified resource, in accordance with priorities established by the Safety Committee. The PPOA will be conducted and include as follows:
 - a. Energy efficiency improvements
 - b. Use of solar and other renewable sources
 - c. Minimize use of petroleum products
 - ◆ Use of alternatives to ozone depleting substances
 - ◆ Alternative fuels
 - ◆ EPA energy star energy efficiency requirements in the purchase of computer equipment. Equip existing computer equipment with low-power standby features.
 - d. Expected reduction percentage
 - e. Environmental/safety benefits
 - f. An economic analysis can be performed to estimate savings or investment recovery time based upon estimated start-up costs, monthly added costs, and monthly avoided costs.
8. Review, approve, and prioritize PPOAs. Implementation will then be prioritized according to the following sequential criteria:
 - a. Environmental and safety compliance
 - b. Environmental and safety benefits

- c. Mission impact
 - d. Economic feasibility
 - e. Ease of implementation
- 9. Develop Standard Operating Procedures for Minimized Material
 - a. Once a PPOA has been approved, a standard operating procedure for the material/process will be developed using the PPOA
 - b. The SOP will then be submitted to the Committee for review
 - c. After Committee approval, the material will be added to the Minimized Material List
 - d. SOP's will be appended to the Minimized Material List
- 10. Establish Minimized Material Listing
 - a. Once a material has been declared minimized (by approval of PPOA and SOP) it will be placed on the Minimized Material Listing
 - b. Any material appearing on this list will only be managed according to the standard operating procedure developed for its minimization

VI. Procurement

- A. The location will, when feasible, purchase material containing the highest content of recycled product

VII. Pollution Prevention Information Sharing

- A. New ideas, strategies and technologies may be developed as this plan is implemented. Transfer of these ideas and strategies to other Locations and groups will play an essential role in the success of this program
- B. The Location will participate in information sharing. This may be accomplished by such means as the following:
 - 1. Submission of articles to the Location or Area Office News Letter
 - 2. Communication between locations
 - 3. Submission of articles to professional publications

VIII. Employee incentive award

- A. An award program will be established to recognize individual effort and contribution to the ideas of this plan. The award will be designed to provide all employees the incentive to continually pursue and develop Pollution Prevention and Waste Minimization opportunities within their work space
- B. The Spot Award System will be used as the incentive award plan

IX. Training - All employees will receive annual training to include:

- A. Contents of this plan
- B. Contents of the Minimized Material Listing
- C. Elements of the Employee Incentive Award Program

X. Program Compliance

- A. Annual program inspection will be accomplished:
 - 1. Inspection will insure Location compliance with developed Standard Operating Procedures
 - 2. Inspection will be certified by inspector signature
 - 3. A copy of the inspection will be given to the Location Coordinator for correction of any inadequacies or non compliance discovered
 - 4. Inspection results will be used in annual plan review for any programmatic benefit

APPENDIX 9.1

Minimized Material Listing w/SOPs Appended